

Interactive effects of parasitic infection and ocean acidification on the calcification of a marine gastropod

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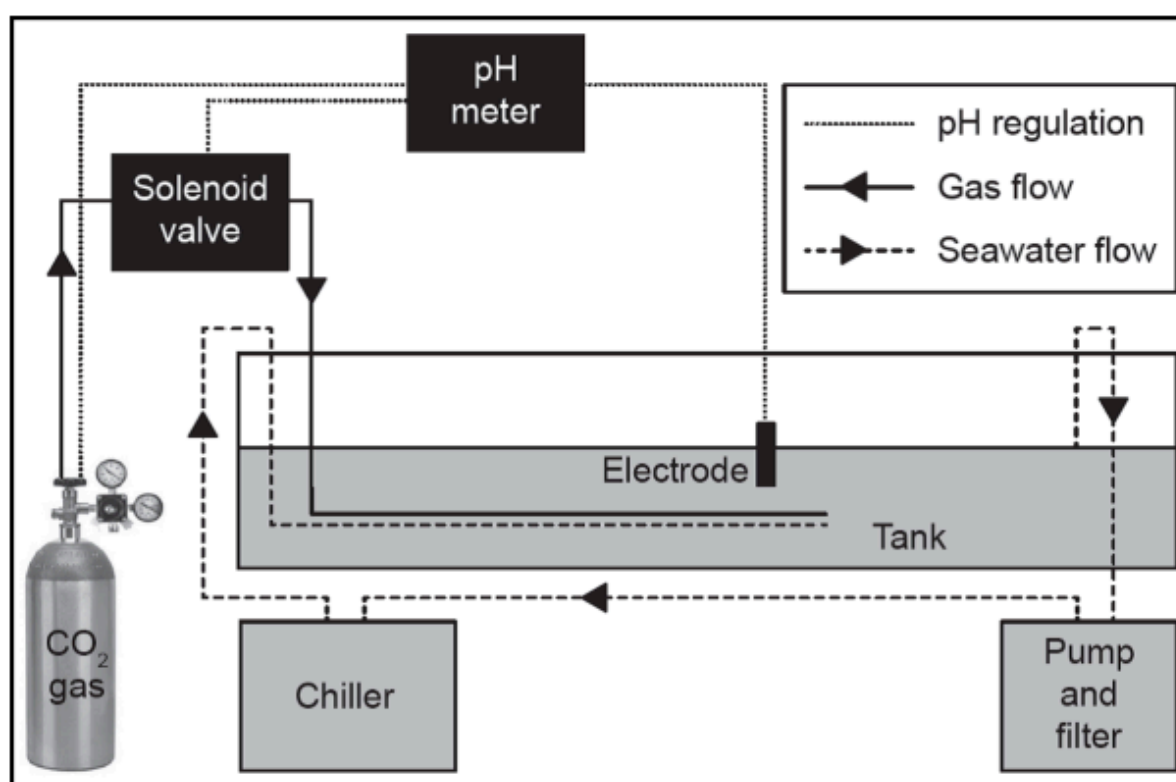


Fig. S1. Schematic of one ocean acidification (OA) simulation unit. Solid lines indicate gas flow, dashed lines indicate seawater flow, and dotted lines indicate electrical connections between components of the pH regulation apparatus.

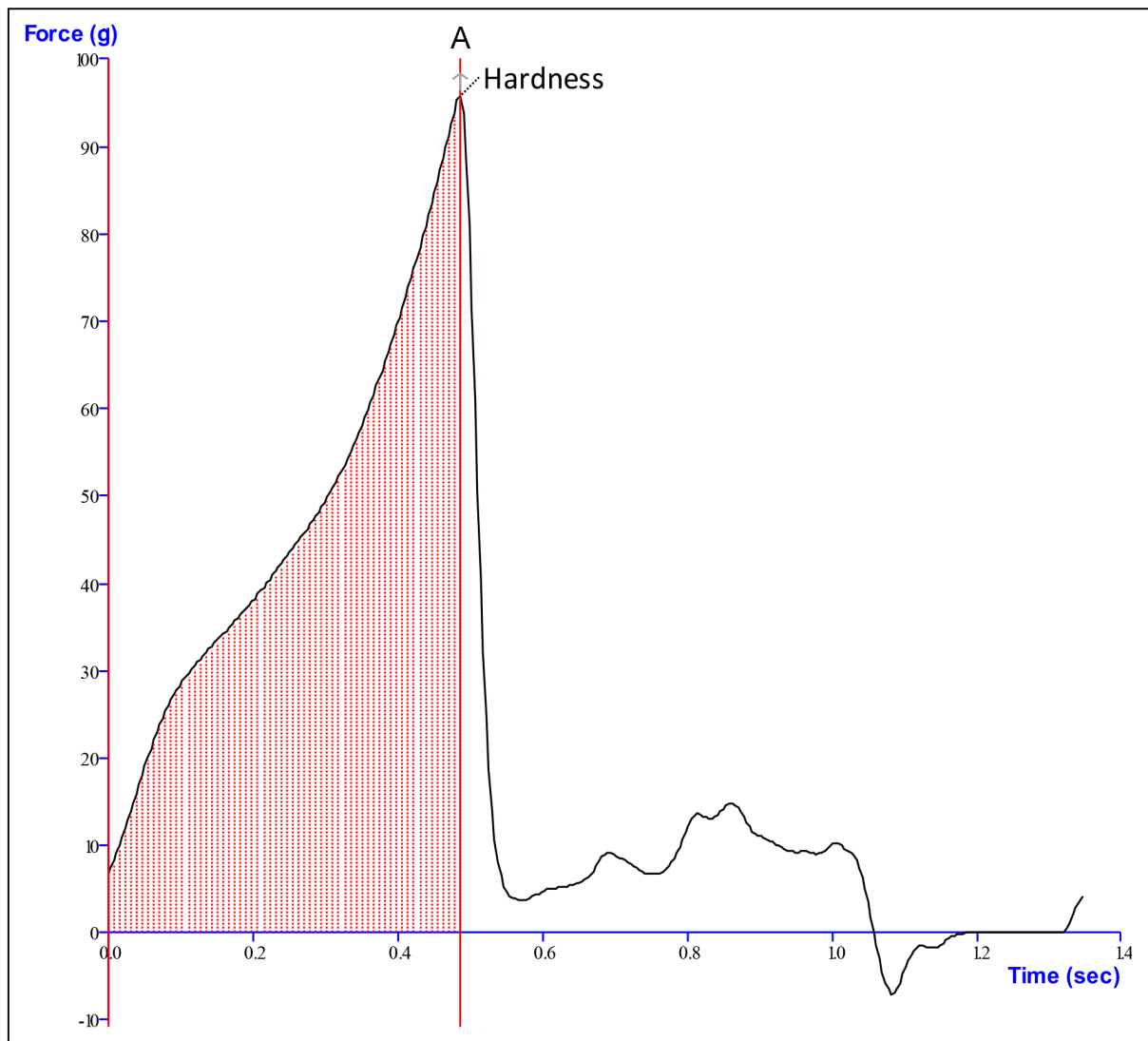


Fig. S2. Sample output of the texture analyser used to calculate the maximum force required to break a sample of shell. Point A indicates the breaking point at approximately 95 grams.

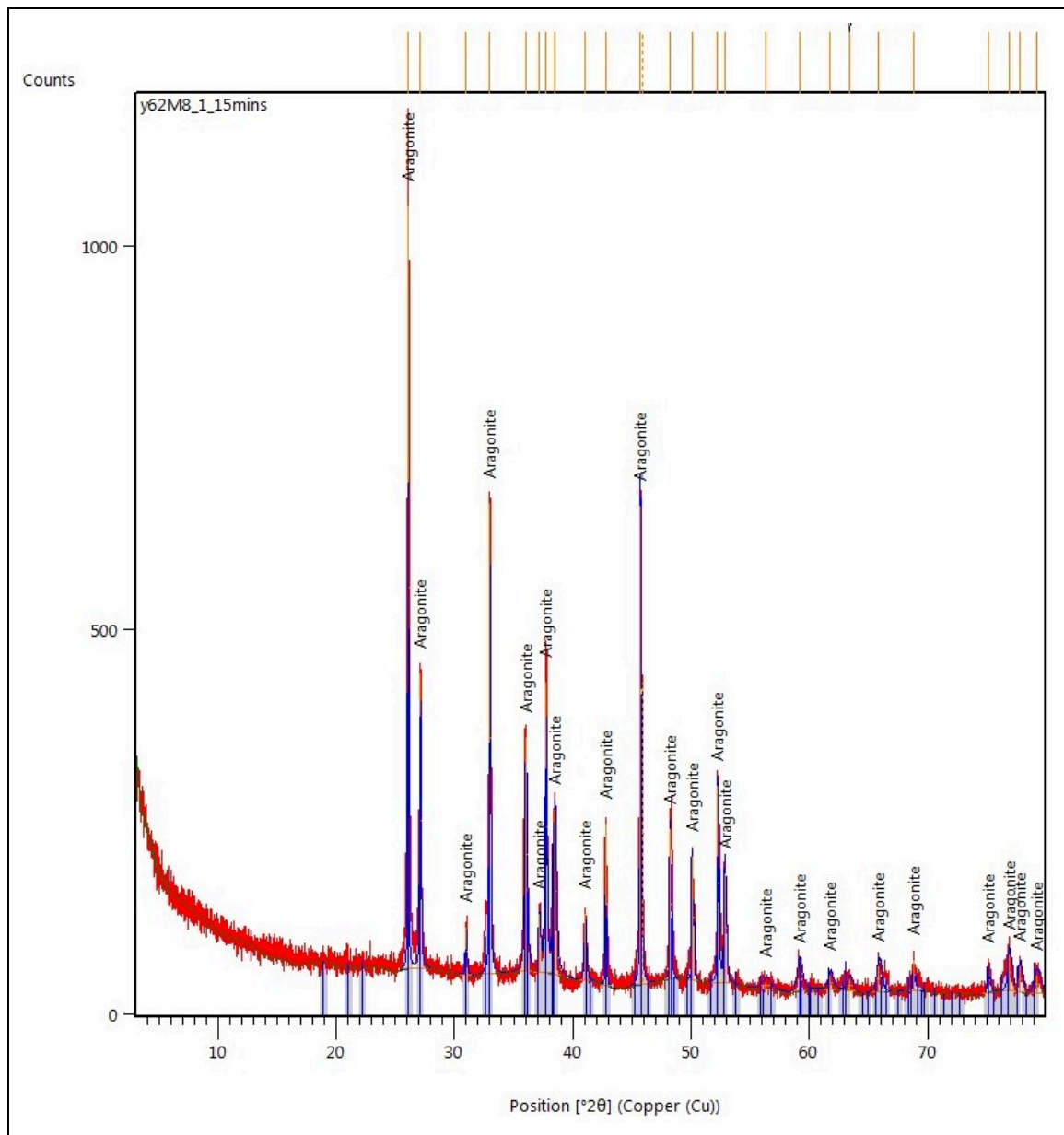


Fig. S3. A sample output graph from the X-ray diffraction analysis of the mineralogical content of *Zeacumantus subcarinatus* shell. The height of each peak is compared against a reference archive and matched with a particular mineral polymorph.

Table S1. Outputs for the analysis of shell growth of snails in each infection category. Sample sizes for each infection category are given in parentheses. 'Length' represents the length of snail shells at the beginning of the 90 day trial.

		df	MS	F	p
Uninfected (73)	pH	2	73.24	12.40	<0.001
	length	1	11.67	11.67	0.001
	pH*length	2	1.75	1.75	0.180
<i>M. novaezealandensis</i> (71)	pH	2	208.40	31.45	<0.001
	length	1	0.18	0.03	0.887
	pH*length	2	3.17	0.48	0.625
<i>Philophthalmus</i> sp. (69)	pH	2	105.98	38.48	<0.001
	length	1	1.99	0.72	0.383
	pH*length	2	1.24	0.45	0.639
<i>Acanthoparyphium</i> sp. (72)	pH	2	0.01	8.81	<0.001
	length	1	0.00	0.61	0.436
	pH*length	2	0.00	0.63	0.533

Table S2. Outputs for the analysis of the changes in shell length of snails in each infection category. Sample sizes for each infection category are given in parentheses. ‘Length’ represents the total length of snail shells at the beginning of the 90 day trial.

		df	MS	F	p
Uninfected (79)	pH	2	13.75	18.64	<0.001
	length	1	0.23	0.31	0.578
	pH*length	2	1.95	2.65	0.078
<i>M. novaezealandensis</i> (74)	pH	2	208.40	31.45	<0.001
	length	1	0.18	0.03	0.887
	pH*length	2	3.17	0.48	0.625
<i>Philophthalmus</i> sp. (78)	pH	2	503.78	21.06	<0.001
	length	1	50.41	2.11	0.151
	pH*length	2	3.92	0.16	0.849
<i>Acanthoparyphium</i> sp. (83)	pH	2	2.96	7.87	<0.001
	length	1	2.99	7.96	0.006
	pH*length	2	0.01	0.02	0.979

Table S3. Outputs for the analysis of the breaking force of shell formed during 90 day exposure to reduced pH by snails in each infection category. Sample sizes for each infection category are given in parentheses. ‘Length’ represents the total length of snail shells at the beginning of the 90 day trial.

		df	MS	F	p
Uninfected (70)	pH	2	0.0054792	22.4831	<0.001
	length	1	0.0001137	0.4667	0.497
	pH*length	2	0.0004271	1.7526	0.182
<i>M. novaezealandensis</i> (63)	pH	2	0.0066646	12.1322	<0.001
	length	1	0.0000019	0.0035	0.953
	pH*length	2	0.0009854	1.7938	0.175
<i>Philophthalmus</i> sp. (65)	pH	2	0.103904	5.2606	0.008
	length	1	0.029282	1.4825	0.228
	pH*length	2	0.045299	2.2934	0.110
<i>Acanthoparyphium</i> sp. (65)	pH	2	137.877	4.9045	0.011
	length	1	0.182	0.0065	0.936
	pH*length	2	8.958	0.3187	0.728

Table S4. Outputs for the analysis of the breaking force of shell formed prior to 90 day exposure to reduced pH by snails in each infection category. Sample sizes for each infection category are given in parentheses. ‘Length’ represents the total length of snail shells at the beginning of the 90 day trial.

		df	MS	<i>F</i>	p
Uninfected (70)	pH	2	17.400	0.6618	0.519
	length	1	83.140	3.1620	0.080
	pH*length	2	3.657	0.1391	0.870
<i>M. novaezealandensis</i> (63)	pH	2	1.4839	3.4825	0.037
	length	1	5.0231	11.7883	0.001
	pH*length	2	0.0022	0.0052	0.995
<i>Philophthalmus</i> sp. (65)	pH	2	6.7807	8.8043	<0.001
	length	1	0.0039	0.0051	0.944
	pH*length	2	0.0638	0.0828	0.921
<i>Acanthoparyphium</i> sp. (65)	pH	2	57.863	6.8807	0.002
	length	1	0.847	0.1008	0.752
	pH*length	2	11.654	1.3858	0.258